REMARKS

Claims 3-28 are pending. Claims 3, 4, 5, 6 and 28 are independent. Claims 1 and 2 have been cancelled. Claim 11 dependent from claim 1 has been rewritten in independent form.

REJECTION UNDER 35 U.S.C. 112

Claim 9 has been rejected under 35 U.S.C. 112, second paragraph, as being indefinite. This rejection is respectfully traversed for the following reasons.

Claim 9 recites that a signal line connecting a power source of high potential for supplying the current to the display element to a power source of a low potential serving as an operation reference for the on-control element and the off-control element has an element provided thereon for blocking the current flowing from the power source of high potential to the power source of low potential.

The Examiner contends that it "is unclear as to how current blocking relates to the other elements in the claim."

The pivotal issue generated by a rejection under the second paragraph of 35 U.S.C. § 112 is whether one having ordinary skill in the art, with the supporting specification in hand, would be able to ascertain the scope of the claims with reasonable precision. ***In re Moore***, 439 F.2d 1232, 169 USPQ 236 (CCPA 1971); ***In re Hammack***, 427 F.2d 1378, 166 USPQ 204 (CCPA 1970). It should be emphasized that unpatented claims are reasonably construed in light of the supporting specification. ***In re Okuzawa***, 537 F.2d 545, 190 USPQ 464 (CCPA 1976); ***In re Royka***, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Moreover, reasonable precision is all that is required. See, for example, ***U.S. v. Telectronics Inc.***, 857 F.2d 778, 8 USPQ2d 1217; ***Hybritech, Inc, v. Monoclonal Antiobodies, Inc.***, 802 F.2d 1367, 231 USPQ 81 (Fed. Cir. 1986); ***In re Kroekel***, 504 F.2d 1143, 183 USPQ 610 (CCPA 1974).

A decision on whether a claim is invalid under this section of the statute requires a determination of whether those skilled in the art would understand what is claimed when the claim is read in light of the specification, ***Seattle Box Co. v Industrial Crating & Packing***, 731 F.2d 381, 385, 221 U.S.P.Q. 568, 574 (Fed. Cir. 1984). Claim language is viewed not in a vacuum, but in light of the teachings of the prior art and of the application disclosure as it would be interpreted by one possessing the ordinary level of skill in the art. ***In re Johnson***, 558 F.2d 1008, 194 USPQ 187 (CCPA 1977); ***In re Moore, supra.***

With the above legal precedents in mind, Applicants respectfully point out that the Examiner does not explain why one having ordinary skill in the art, armed with the supporting specification, would have been confused as to the scope of claim 9 when read in light of the disclosure.

It is respectfully submitted that claim 9 clearly indicates that the signal line connecting a power source of high potential to a power source of a low potential has an element for blocking the current flowing from the power source of high potential to the power source of low potential. For example, transistor TR2 in FIG. 2 may correspond to that blocking element.

Accordingly, one having ordinary skill in the art, with the supporting specification in hand, would be able to ascertain that the current blocking element, such as transistor TR2 in FIG. 2, blocks the current between two power sources recited in the claim.

Therefore, the Examiner's rejection is unwarranted and should be withdrawn.

REJECTION UNDER 35 U.S.C. 102

Claims 1-5, 11, 20 and 21 have been rejected under 35 U.S.C. 102(e) as being anticipated by Kitai et al. (7,133,009).

Claims 1 and 2 have been cancelled.

The rejection of claims 3-5, 11, 20 and 21 is respectfully traversed for the following reasons.

Anticipation, under 35 U.S.C. § 102, requires that each element of a claim in issue be found, either expressly described or under principles of inherency, in a single prior art reference. ***Kalman v. Kimberly-Clark Corp.,*** 713 F.2d 760, 218 USPQ 781 (Fed. Cir. 1983); ***Richardson v. Suzuki Motor Co.,*** 868 F.2d 1226, 9 USPQ2d 1920 (Fed. Cir. 1989) *cert. denied,* 110 S.Ct. 154 (1989). The term "anticipation," in the sense of 35 U.S.C. 102, has acquired the accepted definition meaning "the disclosure in the prior art of a thing substantially identical with the claimed invention." ***In re Schaumann***, 572 F.2d 312, 197 USPQ 5 (CCPA 1978).

As demonstrated below, Kitai does not disclose each element of the rejected claims.

In particular, independent claim 3 recites a display device of the active matrix drive type comprising

a display panel having a plurality of pixels arranged in the form of a matrix, and

a scanning driver and a data driver which are connected to the display panel.

The display device being characterized in that each of the pixels of the display panel comprises

a display element luminescent when supplied with current or voltage,

a write element to be brought into conduction when impressed with scanning voltage from the scanning driver,

voltage holding means to be impressed with data voltage from the data driver by the conduction of the write element for holding the data voltage,

a drive element for energizing or deenergizing the display element in response to the input of an on/off control signal,

an on-control element for turning on the drive element,

an off-control element for turning off the drive element, and

control means for controlling the timing of the on-operation of the on-control element or the off-operation of the off-control element in accordance with the output voltage of the voltage holding means.

The Examiner considers the switching medium 34 in FIG. 5a to correspond to the claimed drive element, on- and off- control elements and control means.

However, Kitai contains no teaching of the control means for controlling the timing of the on-operation of the on-control element or the off-operation of the off-control element in accordance with the output voltage of the voltage holding means.

The reference does not disclose that the switching medium 34 performs these operations.

In the event the Examiner relied upon inherency without expressly indicating such reliance, the Examiner should be aware that inherency requires certainty, not speculation. ***In re Rijckaert***, 9 F.3rd 1531, 28 USPQ2d 1955 (Fed. Cir. 1993); ***In re King***, 801 F.2d 1324, 231 USPQ 136 (Fed. Cir. 1986); ***W. L. Gore & Associates, Inc. v. Garlock, Inc.***, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983); ***In re Oelrich***, 666 F.2d 578, 212 USPQ 323 (CCPA 1981); ***In re Wilding***, 535 F.2d 631, 190 USPQ 59 (CCPA 1976). To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probability or possibilities. ***In re Robertson***, 169 F.3d 743, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999).

The Examiner provided no factual basis upon which to conclude that the switching medium 34 necessarily controls the timing of the on-operation of the on-control element or the

off-operation of the off-control element in accordance with the output voltage of the voltage holding means, as claim 3 requires.

Moreover, one skilled in the art would have no reason for such a conclusion.

Therefore, Kitai neither expressly nor inherently discloses the control means for performing operations recited in claim 3.

Further, Kitai does not disclose separate on and off control elements for turning on and off the drive element, as claim 3 requires.

Accordingly, it cannot be said that Kitai describes the invention recited in claim 3 within the meaning of 35 U.S.C. § 102. ***Kalman v. Kimberly-Clark Corp.,***; ***Richardson v. Suzuki Motor Co., supra.***

Independent claim 4 recites a display device of the active matrix drive type comprising a display panel having a plurality of pixels arranged in the form of a matrix, and

a scanning driver and a data driver which are connected to the display panel.

The display device is characterized in that each of the pixels of the display panel comprises

a display element luminescent when supplied with current or voltage,

a write element to be brought into conduction when impressed with scanning voltage from the scanning driver,

voltage holding means to be impressed with data voltage from the data driver by the conduction of the write element for holding the data voltage,

a drive element for energizing or deenergizing the display element in response to the input of an on/off control signal,

an off-control element for turning off the drive element, where the pixels are divided into pixel groups each comprising pixels adjacent to one another and each having an on-control element for turning on the drive element of each of the pixels of the group, and

control means for controlling the timing of the off-operation of the off-control element in accordance with the output voltage of the voltage holding means of each pixel.

The Examiner considers the switching medium 34 in FIG. 5a to correspond to the claimed drive element, on- and off- control elements and control means.

However, Kitai does not disclose an off-control element for each pixel and on-control element for each pixel group, as claim 4 requires.

Moreover, as discussed above, the reference does not disclose the claimed drive element and control means.

Therefore, claim 4 is not anticipated by Kitai.

Independent claim 5 recites a display device of the active matrix drive type comprising a display panel having a plurality of pixels arranged in the form of a matrix, and

a scanning driver and a data driver which are connected to the display panel.

The display device is characterized in that each of the pixels of the display panel comprises

a display element luminescent when supplied with current or voltage,

a write element to be brought into conduction when impressed with scanning voltage from the scanning driver,

voltage holding means to be impressed with data voltage from the data driver by the conduction of the write element for holding the data voltage,

a drive element for energizing or deenergizing the display element in response to the input of an on/off control signal

an on-control element for turning on the drive element, where the pixels are divided into pixel groups each comprising pixels adjacent to one another and each having an off-control element for turning off the drive element of each of the pixels of the group, and

control means for controlling the timing of the on-operation of the on-control element in accordance with the output voltage of the voltage holding means of each pixel.

The Examiner considers the switching medium 34 in FIG. 5a to correspond to the claimed drive element, on- and off- control elements and control means.

However, Kitai does not disclose an on-control element for each pixel and off-control element for each pixel group, as claim 5 requires.

Also, as discussed above, the reference does not disclose the claimed drive element and control means.

Therefore, claim 5 is not anticipated by Kitai.

Independent claim 11 recites a display device of the active matrix drive type comprising a display panel having a plurality of pixels arranged in the form of a matrix, each of the pixels of the display panel having a display element luminescent when supplied with electric power, and a control circuit for controlling the luminescence period of the display element within 1 frame period in accordance with data voltage to be supplied from outside, the display device being characterized in that the control circuit of each pixel of the display panel comprises a first control element for starting to energize the display element and a second control element for deenergizing the display element.

The claim specifies that the first control element is provided on and connected in series with a power supply line extending from a power source for supplying the electric power to the display element, is turned on when starting to energize the display element and starts to energize the display element, and the second control element is turned on when deenergizing the display element and turns off the first control element to thereby deenergize the display element.

It is noted that claim 11 has been amended to incorporate the subject matter of claim 1.

In his rejection of claim 1, the Examiner considers the switching medium 34 in FIG. 5a of Kitai to correspond to the claimed first and second control elements.

In the rejection of claim 11, the Examiner did not point out specifically wherein Kikai discloses that the switching medium 34 includes two separate control elements arranged and operating in the manner recited in claim 11.

It is respectfully submitted that Kikai does not disclose that the switching medium 34 includes the first control element provided on and connected in series with a power supply line extending from a power source for supplying the electric power to the display element, turned on when starting to energize the display element and starts to energize the display element, and the second control element turned on when deenergizing the display element and turns off the first control element to thereby deenergize the display element, as claim 11 requires.

Hence, Kikai does not anticipate the subject matter of claim 11.

The claims 20 and 21 depend from claim 11. Therefore, they are defined over the prior art at least for the reasons presented above in connection with claim 11.

Applicants, therefore, respectfully submit that the rejection of claims 3-5, 11, 20 and 21 under 35 U.S.C. 102(e) as being anticipated by Kitai et al. is untenable and should be withdrawn.

REJECTIONS UNDER 35 U.S.C. 103

Claims 6-8, 12-19 and 22-28 have been rejected under 35 U.S.C. 103 as being unpatentable over Kitai in view of Graves (4,554,539).

This rejection is respectfully traversed for the following reasons.

Recent Examination Guidelines for Determining Obviousness and decisions of the USPTO Board of Appeal and Interferences in ***Ex parte Smith,*** Appeal 2007-1925 (June 25, 2007) and ***Ex parte Catan,*** Appeal 2007-0820 (July 3, 2007) that follow the Supreme Court's decision in ***KSP Int'l Co. v. Teleflex Inc.,*** 127 S.Ct. 17127 (2007) put forth an obviousness analysis that emphasizes a functional approach based on ***Graham v. John Deere*** factors. As stated in ***Graham v. John Deere Co.*** 383 U.S. 1, 13, 148 U.S.P.Q. 459, 465 (1966), obviousness under 35 U.S.C. §103 must be determined by (1) analyzing the scope and content of the prior art; (2) ascertaining the differences between the prior art and the claims in issue; (3) resolving the level of ordinary skill in the pertinent art, and (4) analyzing secondary considerations.

As demonstrated below, the Examiner has failed to properly ascertain differences between the prior art and the claims.

In particular, independent claim 6 recites a display device of the active matrix drive type comprising

a display panel having a plurality of pixels arranged in the form of a matrix, and

a scanning driver and a data driver which are connected to the display panel.

The display device is characterized in that each of the pixels of the display panel comprises:

a display element luminescent when supplied with current or voltage,

a write element to be brought into conduction when impressed with scanning voltage from the scanning driver,

voltage holding means to be impressed with data voltage from the data driver by the conduction of the write element for holding the data voltage,

a drive element for energizing or deenergizing the display element in response to the input of an on/off control signal, and

pulse-width modulation control means for on/off-controlling the drive element by pulse-width-modulating the output voltage of the voltage holding means with ramp voltage having a predetermined rate of variation.

The pulse-width modulation control means comprises an on-control element for turning on the drive element, and an off-control element for turning off the drive element.

The Examiner admits that Kitai does not disclose the claimed pulse-width modulation control means. However, he relies upon Graves for disclosing the pulse-width modulation (PWM) signal 24 for controlling the column driver.

Considering Graves, the reference discloses PWM signal 24 for controlling the column driver 24. However, Graves does not teach or suggest the pulse-width modulation control means having an on-control element for turning on the drive element, and an off-control element for turning off the drive element, as claim 6 requires.

As the Examiner admits, Kitai also does not disclose this arrangement. Therefore, even assuming *arguendo* that Kitai were modified in view of Graves, the claimed invention would not result. In particular, the combined prior art teachings would not teach or suggest the pulse-width modulation control means having an on-control element for turning on the drive element, and an off-control element for turning off the drive element.

Hence, the subject matter of claim 6 is not obvious over the applied combination of references.

Independent claim 28 recites a display device of the active matrix drive type comprising a display panel having a plurality of pixels arranged in the form of a matrix, each of the pixels of the display panel having a display element luminescent when supplied with electric power, and

a control circuit for controlling the luminescence period of the display element within 1 frame period in accordance with data voltage to be supplied from outside.

The display device is characterized in that the control circuit of each pixel of the display panel has

a write transistor to be brought into conduction when impressed with scanning voltage,

a capacitor to be impressed with data voltage by the conduction of the write transistor for holding the data voltage, and

a drive transistor provided on and connected in series with a power supply line for supplying the electric power to the display element and to be brought into conduction upon the difference between the voltage to be applied to a gate thereof and the voltage at one terminal of the display element exceeding a predetermined threshold value, and

that a voltage in accordance with the sum of ramp voltage having a predetermined rate of variation and the output voltage of the capacitor is applied to the gate of the drive transistor.

The Examiner considers the switching medium 34 of Kitai to correspond to the claimed capacitor. However, he admits that Kitai does not disclose that a voltage in accordance with the sum of ramp voltage having a predetermined rate of variation and the output voltage of the capacitor is applied to the gate of the drive transistor.

Graves is relied upon for disclosing a PWM signal.

Considering the references, Graves does not disclose the claimed capacitor. Therefore, the reference cannot suggest supplying the drive transistor with the sum of ram voltage and the output voltage of the capacitor.

Kitai does not disclose the ram voltage. Therefore, this reference also cannot suggest supplying the drive transistor with the sum of ram voltage and the output voltage of the capacitor.

Accordingly, the combined teachings of Kitai with Graves do not teach or suggest supplying the drive transistor with the sum of ram voltage and the output voltage of the capacitor, as claim 28 requires.

Hence, the subject matter of claim 28 is not obvious over the combined prior art teachings.

Dependent claims 7, 8, 12-19 and 22-27 are defined over the prior art at least for the reasons discussed above in connection with the respective independent claims.

Dependent claims 9-10 have been rejected under 35 U.S.C. 103 as being unpatentable over Kitai in view of Kasai (7,012,597).

As claims 9 and 10 depend from claim 3, they are defined over the prior art t least for the reasons discussed above in connection with claim 3.

Accordingly, Applicants respectfully submit that the rejections of claims 6-8, 12-19 and 22-28 under 35 U.S.C. 103 as being unpatentable over Kitai in view of Graves, and claims 9-10 under 35 U.S.C. 103 as being unpatentable over Kitai in view of Kasai are unwarranted and should be withdrawn.

In view of the foregoing, and in summary, claims 3-28 are considered to be in condition for allowance. Favorable reconsideration of this application, as amended, is respectfully requested.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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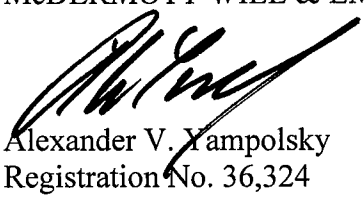

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